REFERENCE 93
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Office of Enforcement

Matthew T. Klein
Hazardous Waste Section
Office of Enforcement
Indiana Department of Environmental Managment
100 North Senate Avenue
Indianapolis, Indiana 46206-6015
(317) 233-6335
Fax: (317) 233-5968

FAX TRANSMISSION COVER SHEET

Date: *November 7, 1996*

To: *Mr. Mike Mikulka*
U.S. EPA

Fax: *(312) 353-4788*

Re: *Attached is the water-specific inspection report for the September 26, 1996 inspection of the GDC Landfill. This report was created by inspector Mark Balazs, Office of Water Management, IDEM.*

Sender: *Matthew T. Klein*

YOU SHOULD RECEIVE 3 PAGES, INCLUDING THIS COVER SHEET. IF YOU DO NOT RECEIVE ALL TIIE PAGES, PLEASE CALL (317) 233-6335 or (317) 233-5529.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Water Management - Inspections Section
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46204

FACILITY SITE INSPECTION

PART I - Basic information about the facility:

FACILITY NAME: Gary Development Company, Inc.

ADDRESS: 479 North Cline Avenue
P.O. Box 6056
Gary, Indiana 46406

SITE CONTACT: Larry Hagen, Jr.
Foreman
(219) 944-7858

CORRESPONDENCE TO: Bose-McKinney and Evans
Atty. Stephen Cherry
2700 First Indiana Plaza
135 North Pennsylvania Street
Indianapolis, Indiana 46204
Telephone: (317) 684-5105

RECEIVING STREAM: Grand Calumet River

FACILITY SIC CODE: 4953 (Refuse Systems)

FACILITY DESCRIPTION: A former mined-out sand pit, the facility began accepting solid waste for disposal in September 1974. The facility operated as a sanitary landfill until August 1989, when waste acceptance reportedly stopped.

PART II - Basic information on inspection findings:

On September 26, 1996, IDEM-NWRO staff members Mark Balazs (OWM), Bob Blaesing (OSHWM), Bob Lamprecht (OSHWM), Bill Burns (OSHWM), and U.S. EPA staff member Mike Mikulka and Indiana Department of Natural Resources-Division of Soil Conservation Urban Conservation Specialist Larry Osterholz conducted an inspection of the abovementioned facility. Photographs of the facility were taken by OSHWM staff. This report only identifies findings of OWM staff member Mark Balazs.

No point-source discharges of process (leachate) waters were observed leaving the property, and there was no evidence of active pumping discharges. However, several point-source discharges of storm water runoff were observed leaving the property's southern boundary into the Grand Calumet River. The runoff was visibly laden with soil sediment and caused a discoloration of the Grand Calumet River along the facility boundary. A sample of the runoff was collected, but never analyzed.

Based on the facility's operational practices and SIC Code (landfill that received industrial wastes classification), an application must be submitted for a storm water permit in accordance with 327 IAC 15-6. It is recommended that the facility apply for an individual storm water permit, based on the potential severity of contamination entering the adjacent Grand Calumet River. This requirement for a permit is also specified in a March 1994 Final Order of the Water Pollution Control Board. In the Order, the company was ordered to cease discharging any water off-site until the discharge conforms with a valid NPDES permit.

PART III - Contact information:

If you require further information about the storm water permitting issue, contact Mark Balazs at (219) 881-5759 or Laura Bieberich, Storm Water Permitting Desk, at (317) 233-6725.

LANDFILL EROSION AND SEDIMENTATION REVIEW

Lake County Soil and Water Conservation District

Date of Landfill Review 9-26-96

Name of Landfill: Gary Development Landfill

Location: 479 N. Cline Avenue; P.O. Box 6056; Gary, Indiana 46406

Manager/Operator: Lawrence Hagen

Review Team: _____ Supervisor, SWCD

Larry Osterholz Urban Conservation Specialist, IDNR

Robert Lamprecht Field Representative, IDEM

_____ District Conservationist, NRCS

List additional participants at the review:

Bill Burns, Inspector/Investigator, IDEM
Mark Balaz, Sanitary Engineer, IDEM
Michael Cuss, Sanitary Engineer, IDEM
Michael Mikulka, Env. Engineer, U.S.EPA

A copy of this SWCD Landfill Review has been sent to:

1. Commissioner Michael O'Connor
   IN Dept. of Environmental Management
   Attn: Solid Waste Technical Compliance
   OSHWM, Rm. N1154
   100 North Senate Avenue
   P.O. Box 6015
   Indianapolis, Indiana 46206-6015

2. Director
   Division of Soil Conservation
   IN. Department of Natural Resources
   402 West Washington Street, Room W265
   Indianapolis, Indiana 46204

3. Chairman
   Board of County Commissioners

4. Bob Lamprecht
   IDEM Northwest Regional Office
   Gainer Bank Building
   504 North Broadway, Room 428
   Gary, Indiana 46404

5. Larry Osterholz
   Urban Conservation Specialist
   800 South College Avenue, Suite 1
   Rensselaer, Indiana 47978-3009

6. Gary Development
   479 N. Cline Avenue
   P.O. Box 6056
   Gary, Indiana 46406

The following report has been compiled/reviewed by:
(circle one)

Paul Kleine
Supervisor, SWCD

10-17-96
Date

1. ***Is there evidence of erosion?*** ___X___ Yes _____ No

   Describe erosion: Sheet, rill, and gully erosion is occurring on unvegetated areas of the landfill.

2. ***Is there evidence of off-site sedimentation?*** ___X___ Yes ___-___ No

   Describe off-site sedimentation: While doing this inspection, it was raining and sediment was washing into the Grand Calumet River.

3. ***Recommendations and Suggestions:***

   Construct an interceptor swale or open ditch at the base of the landfill slopes. Slope the ditch so that it drains to one of the existing sediment basins.

   Construct a temporary diversion berm and channel along the shoulder slope of the fill area. Slope diversion channels so that they drain to temporary slope drains (see attachment). Discharge the slope drains into existing sediment basins. Remove the diversions and slope drains after the site is stabilized with a good vegetative cover of grasses and legumes.

   Fill all existing gullies with soil material and then cover the landfill with good quality topsoil. Use a topsoil that has a dark brown or black color, is friable, and has a loamy texture (preferably with a clay content between 10 and 27 percent). The topsoil should be free of stumps, rocks, and other construction debris.

   Seed a permanent vegetative cover on all areas. Prior to seeding, apply approximately 400 to 500 pounds of 12-12-12 analysis fertilizer, or equivalent, per acre and work into the upper 2 to 3 inches of soil. Select a standard landfill seeding mixture and rate or use one of the mixtures listed on the attached charts. Apply seed uniformly with a drill. or cultipacker-seeder and cover to a depth of 1/4 to 1/2 inch or apply with a hydro-seeder. If using a drill or cultipacker seeder, work on the contour. **The optimum time for seeding is between August 15th and September 30th or March 1st and May 10th.**

   Mulch newly seeded areas with 1 & 1/2 to 2 tons of straw per acre. Use dozer cleats or a mulch anchoring tool to punch the straw 1 to 2 inches into the soil. The intent is to create small barriers to slow surface water runoff as it runs down the slope. Therefore, if using dozer cleats work up and down the slope. Work across the slope (i.e. on the contour) when using a mulch anchoring tool such as a disk with the blades set straight.

4. ***Other comments:***

5. ***For additional information or assistance contact:***

   _____Lake_____ County Soil and Water Conservation District
   928 South Court Street, Suite C
   Crown Point, Indiana 46307
   (219) 663-0238

Practice 3.21
Temporary Diversion

Purpose
(Exhibit 3.21-A)

* To protect work areas from runoff and divert water to sediment traps or stable outlets.

Exhibit 3.21-A. A temporary earthen diversion.

Requirements
(Exhibit 3.21-B)

Contributing drainage area: 3 acres maximum.
Capacity: Peak runoff from a 2-yr. frequency, 24-hr. duration storm event.
Ridge: Side slopes--2:1 or flatter (3:1 or flatter if mowed); top width--2 ft. minimum; freeboard--4 in. minimum.
Channel: Shape--parabolic, trapezoidal, or V-shaped; side slopes--2:1 or flatter (3:1 or flatter if mowed).
Grade: Stable, positive towards outlet, but not exceeding 1%.
Outlet: Non-erosive for design flow; flow containing sediment diverted to sediment trap or basin.
Stabilization: Ridge stabilized if in place more than 30 working days; channel stabilized for design flow.

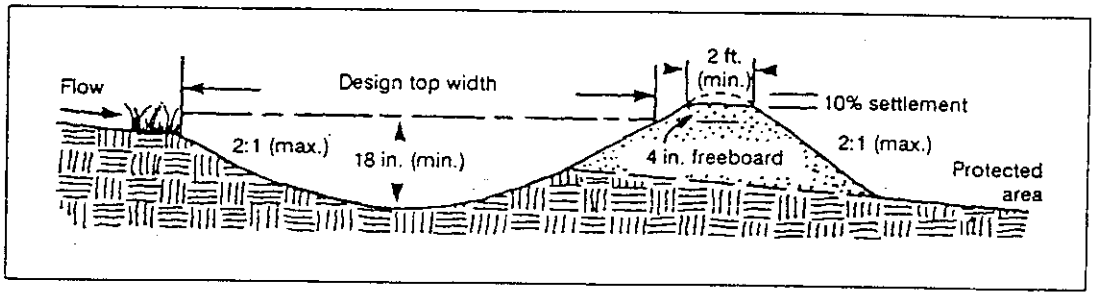

Exhibit 3.21-B. Cross-section view of a temporary diversion.

Installation

SITE PREPARATION:
1. Mark diversion location.
2. Remove trees, brush, stumps, and other debris from site.
3. Set grade and alignment to fit site needs and topography, maintaining a stable, positive grade towards outlet, and realigning or elevating the ridge as needed to avoid reverse grade.

CONSTRUCTION:

1. Construct the diversion to dimensions and grades shown in *Exhibit 3.21-B*.
2. Build the ridge higher than designed, and compact with wheels of the construction equipment. (The compacted ridge must be at or above design grade at all points, while the channel must be at design grade.)
3. Leave sufficient area along the diversion to permit clean-out and re-grading.
4. Stabilize the outlets during construction of the diversion. (Flow containing sediment must be diverted to a sediment trap.)
5. If the diversion is constructed above a steep slope, use temporary slope drains for outlets (Practice 3.33).

STABILIZATION:

1. Vegetate and mulch the ridge immediately after construction, unless the diversion will be in place less than 30 working days.

Maintenance

* Inspect weekly and following each storm event.
* Remove sediment from the channel and reinforce the ridge as needed.
* Check outlets and make necessary repairs immediately.
* Remove sediment from traps when they are 50% full.
* When the work area has been stabilized, remove the ridge, fill the channel to blend with the natural ground, remove temporary slope drains, and stabilize all disturbed areas.

Common concerns

Sedimentation where channel grade decreases or reverses--results in overtopping; realign or deepen the channel to maintain grade.

Low point in ridge where the diversion crosses a natural depression--build up the ridge.

Vehicle crossing point--maintain the ridge height, flatten the side slopes, and protect the ridge with gravel at the crossing point.

Excessive grade in channel--results in erosion in channel; install an erosion-resistant lining, or realign to reduce the grade (Practices 3.31 and 3.32).

Excessive velocity at outlet--install an outlet stabilization structure (Practices 3.41, 3.42, and 3.43).

Ridge not compacted--runoff from storm event may cause failure; use construction equipment to compact.

Practice 3.26
Temporary Slope Drain

Purpose
(Exhibit 3.26-A)

* To convey runoff water down the face of a cut or fill slope without causing erosion.

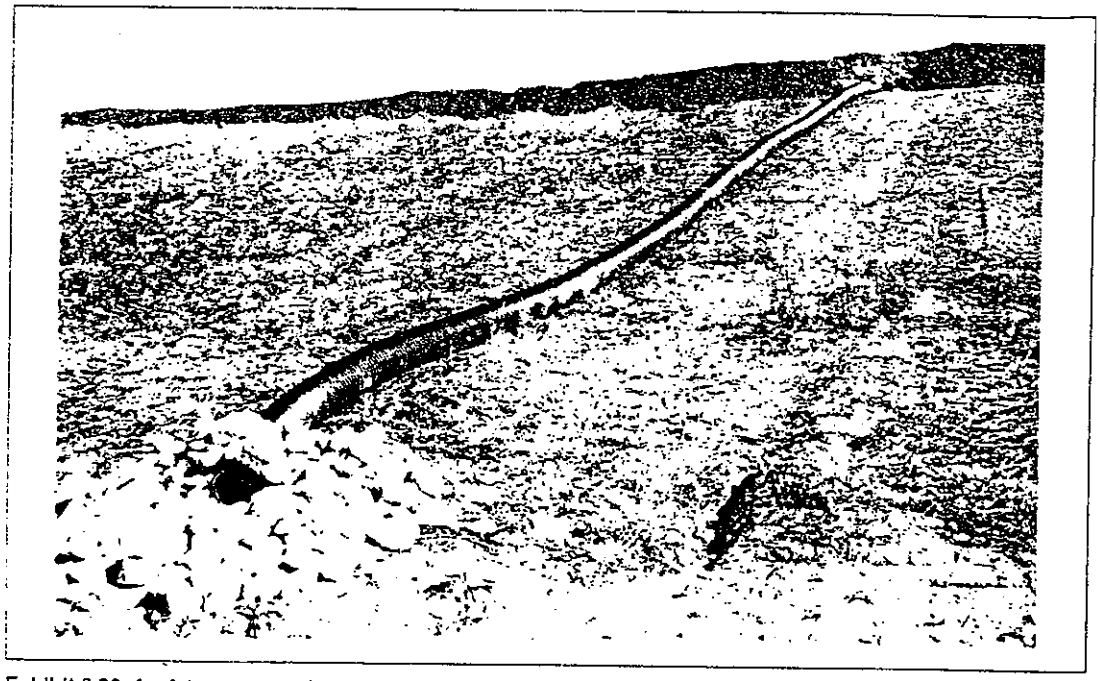

Exhibit 3.26-A. A temporary slope drain conveys runoff to a lower elevation without eroding the slope of this landfill. The pipe should be anchored with stakes to prevent it from moving.

Requirements
(Exhibits 3.26-B, C, and D)

Capacity: Peak runoff from 2-yr. frequency, 24-hr. duration storm event.
Pipe size: Based on drainage area as shown in *Exhibit 3.26-B*).
Material: Strong, flexible pipe, such as heavy-duty, non-perforated, corrugated plastic.
Inlet section: Standard "T" or "L" flared-end section with metal toe plate.
Connection to ridge at top of slope: Compacted fill over pipe with minimum dimensions, 1½-ft. depth, 4-ft. top width, and 6-in. higher than ridge.
Outlet: Pipe extends beyond toe of slope, and discharges into a sediment trap or basin unless contributing drainage area is stable.

Exhibit 3.26-B. Pipe Size for a Temporary Slope Drain.

Max. drainage area per pipe	Min. pipe diameter
0.5 acre	8 in.
0.75 acre	10 in.
1.0 acre	12 in.
Greater than 1.0 acre	Individually designed

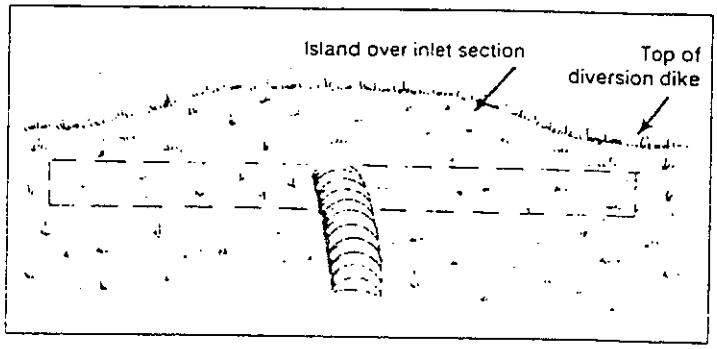

Exhibit 3.26-C. Slope drain should have a compacted fill island to prevent overtopping and diversion dike to direct runoff to the drain pipe.

Installation

1. Place temporary slope drains on undisturbed soil or well-compacted fill.
2. Set the slope drain inlet at the bottom of the diversion channels.
3. Connect the pipe to the inlet section.
4. Construct the diversion ridge by placing fill over the pipe in 6 in. lifts.

5. Compact each lift by hand-tamping under and around the inlet and along the pipe. (*Caution:* Excessive compacting may displace or collapse the pipe.)
6. Repeat Steps 4 and 5 until the minimum depth, width, and side slope dimensions shown in *Exhibit 3.26-D* are reached. Making the top of the fill 6 in. higher than the adjoining diversion ridge creates an island over the pipe to prevent overtopping (see *Exhibit 3.26-C*).
7. Make all pipe connections watertight and secure so that joints will not separate in use.
8. Anchor the pipe to the face of the slope with stakes spaced no more than 10 ft. apart (see *Exhibit 3.26-D*).
9. Extend the drain beyond the toe of the slope to a stable grade, and protect the outlet from erosion. (Terminate the drain in a 4-ft. level section, if possible.)
10. Grade the diversion channel at the top of the slope toward the temporary slope drain. A stable, positive grade not exceeding 2% is needed.
11. Stabilize all disturbed areas following installation.

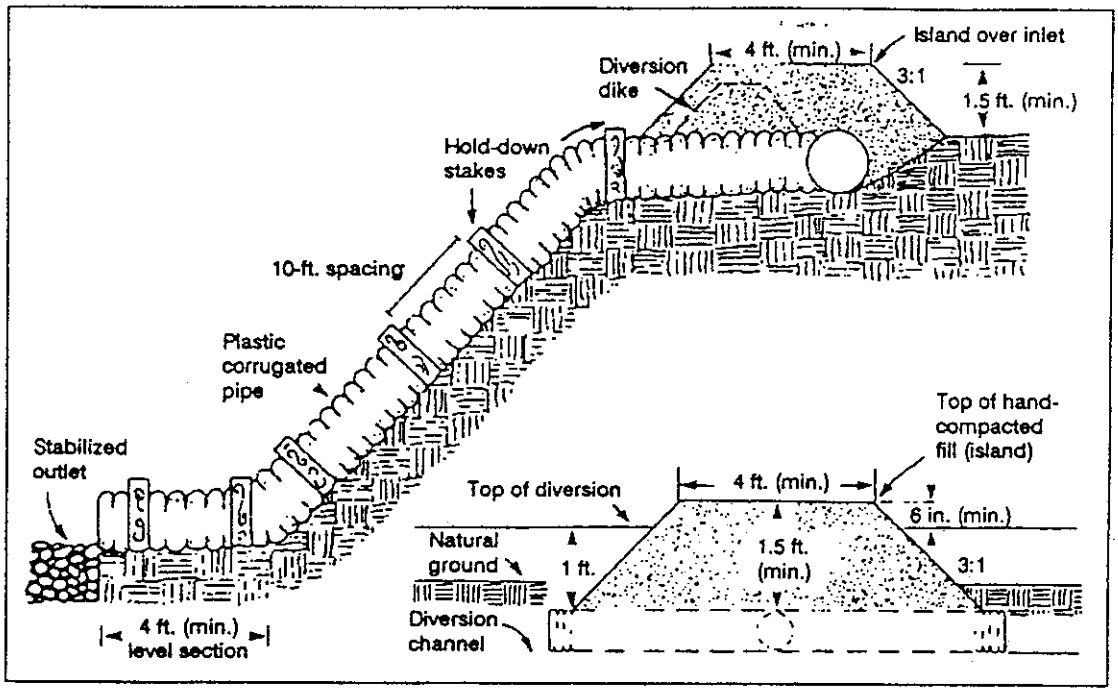

Exhibit 3.26-D. Cross-section view of a temporary slope drain, with detail of inlet.

Maintenance

* Inspect slope drains and supporting diversions once a week and after every storm event.
* Check the inlet for sediment or trash accumulation; clear and restore to proper entrance condition.
* Check the fill over the pipe for settlement, cracking, or piping holes; repair immediately.
* Check for holes where the pipe emerges from the dike; repair immediately.
* Check the conduit for evidence of leaks or inadequate anchoring; repair immediately.
* Check the outlet for erosion or sedimentation; clean and repair, or extend if necessary.
* Once slopes have been stabilized, remove the temporary diversions and slope drains, and stabilize all disturbed areas.

Common concerns

Washout along pipe due to seepage and piping--inadequate compaction, insufficient fill, or installation is too close to the edge of the slope.

Overtopping caused by undersized or blocked pipe--drainage area may be too large.

Overtopping caused by improper grade of channel and ridge--maintain a positive grade.

Overtopping due to poor entrance conditions and trash buildup at pipe inlet--deepen and widen the channel at the pipe entrance; inspect and clear inlet frequently.

Erosion at outlet--the pipe should be extended to a stable grade or an outlet stabilization structure is needed (Practice 3.41).

Displacement or separation of pipe--tie the pipe down, and secure the joints.

Practice 3.12
Permanent Seeding

Purposes
(Exhibit 3.12-A)

* To reduce erosion and sedimentation damage by stabilizing exposed areas where additional work (e.g., grading) is not scheduled for a period of more than a year or areas where final grading has been completed.
* To reduce problems associated with mud or dust from bare soil surfaces during construction.
* To reduce sediment runoff to downstream areas.
* To improve the visual aesthetics of the construction area.

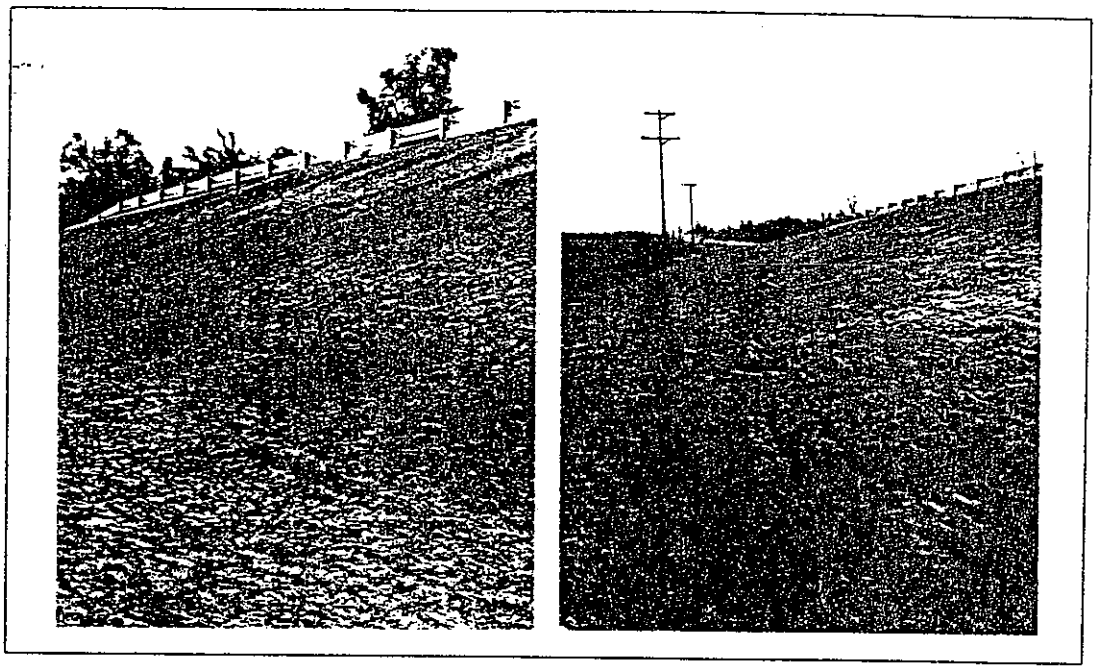

Exhibit 3.12-A. A road right-of-way (left) newly permanent seeded and mulched and (right) 6 mo. later.

Requirements

Site and seedbed preparation: Graded, and lime and fertilizer applied.

Plant species: Selected on the basis of soil type, soil pH, region of the state, time of year, and planned use of the area to be seeded *(see Exhibit 3.12-C)*.

Mulch: Clean grain straw, hay, wood fibre, etc., to protect seedbed and encourage plant growth. The mulch may need to be anchored to reduce removal by wind or water, or erosion control blankets may be considered.

Application
(Exhibits 3.12-B, C, and D)

Permanently seed all final grade areas (e.g., landscape berms, drainage swales, erosion control structures, etc.) as each is completed and all areas where additional work is not scheduled for a period of more than a year.

SITE PREPARATION:

1. Install practices needed to control erosion, sedimentation, and runoff prior to seeding. These include temporary and permanent diversions, sediment traps and basins, silt fences, and straw bale dams (Practices 3.21, 3.22, 3.72, 3.73, 3.74, and 3.75).
2. Grade the site and fill in depressions that can collect water.
3. Add topsoil to achieve needed depth for establishment of vegetation (Practice 3.02).

SEEDBED PREPARATION:

1. Test soil to determine pH and nutrient levels. (Contact your county SWCD or Cooperative Extension office for assistance and soils information, including available testing services.)
2. If soil pH is unsuitable for the species to be seeded, apply lime according to test recommendations.

3. Fertilize as recommended by the soil test. If testing was not done, consider applying 400-600 lbs./acre of 12-12-12 analysis, or equivalent, fertilizer.
4. Till the soil to obtain a uniform seedbed, working the fertilizer and lime into the soil 2-4 in. deep with a disk or rake operated across the slope *(Exhibit 3.12-B)*.

SEEDING:

Optimum seeding dates are Mar. 1-May 10 and Aug. 10-Sept. 30. Permanent seeding done between May 10 and Aug. 10 may need to be irrigated. As an alternative, use temporary seeding (Practice 3.11) until the preferred date for permanent seeding.

1. Select a seeding mixture and rate from *Exhibit 3.12-C*, based on site conditions, soil pH, intended land use, and expected level of maintenance.
2. Apply seed uniformly with a drill or cultipacker-seeder *(Exhibit 3.12-D)* or by broadcasting, and cover to a depth of 1/4-1/2 in.
3. If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
4. Mulch all seeded areas (Practice 3.15). Consider using erosion control blankets on sloping areas (Practice 3.17). (NOTE: If seeding is done with a hydroseeder, fertilizer and mulch can be applied with the seed in a slurry mixture.)

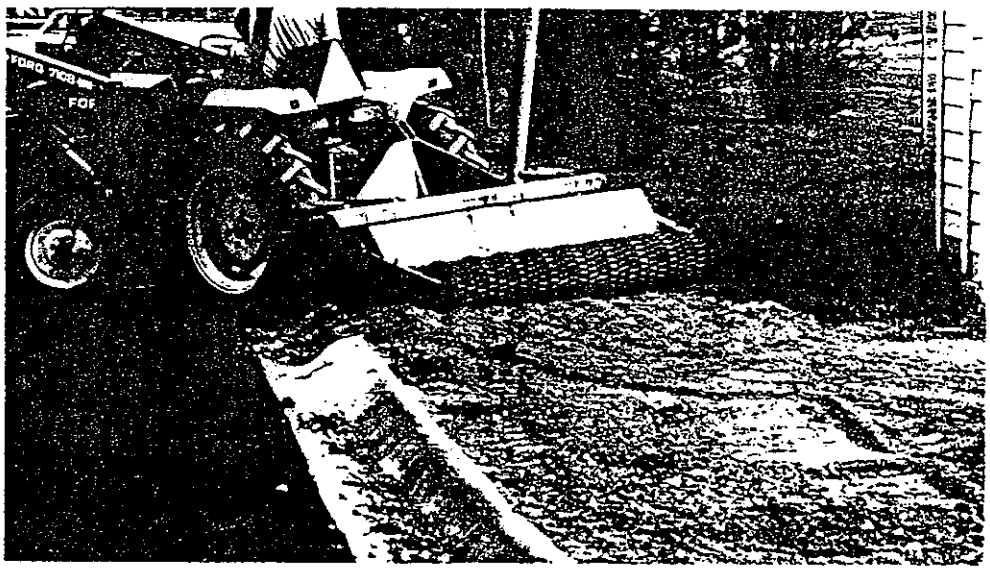

Exhibit 3.12-B. Preparing the seedbed with a combination roto-tiller and cultipacker.

Exhibit 3.12-C. Permanent Seeding Recommendations.

This table provides several seeding options. Additional seed species and mixtures are available commercially. When selecting a mixture, consider site conditions, including soil properties (e.g., soil pH and drainage), slope aspect and the tolerance of each species to shade and droughtiness.

Seed species and mixtures	Rate per acre	Optimum soil pH
OPEN AND DISTURBED AREAS (REMAINING IDLE MORE THAN 1 YR.)		
1. Perennial ryegrass	35 to 50 lbs.	5.6 to 7.0
+ white or ladino clover*	1 to 2 lbs.	
2. Kentucky bluegrass	20 lbs.	5.5 to 7.5
+ smooth bromegrass	10 lbs.	
+ switchgrass	3 lbs.	
+ timothy	4 lbs.	
+ perennial ryegrass	10 lbs.	
+ white or ladino clover*	1 to 2 lbs.	

Exhibit 3.12-C. Continued.

Seed species and mixtures	Rate per acre	Optimum soil pH
3. Perennial ryegrass	15 to 30 lbs.	5.6 to 7.0
+ tall fescue**	15 to 30 lbs.	
4. Tall fescue**	35 to 50 lbs.	5.5 to 7.5
+ ladino or white clover*	1 to 2 lbs.	
STEEP BANKS AND CUTS, LOW MAINTENANCE AREAS (NOT MOWED)		
1. Smooth bromegrass	25 to 35 lbs.	5.5 to 7.5
+ red clover*	10 to 20 lbs.	
2. Tall fescue**	35 to 50 lbs.	5.5 to 7.5
+ white or ladino clover*	1 to 2 lbs.	
3. Tall fescue**	35 to 50 lbs.	5.5 to 7.5
+ red clover*	10 to 20 lbs.	
(Recommended north of US 40)		
4. Orchardgrass	20 to 30 lbs.	5.6 to 7.0
+ red clover*	10 to 20 lbs.	
+ ladino clover*	1 to 2 lbs.	
5. Crownvetch*	10 to 12 lbs.	5.6 to 7.0
+ tall fescue**	20 to 30 lbs.	
(Recommended south of US 40)		
LAWNS AND HIGH MAINTENANCE AREAS		
1. Bluegrass	105 to 140 lbs.	5.5 to 7.0
2. Perennial ryegrass (turf-type)	45 to 60 lbs.	5.6 to 7.0
+ bluegrass	70 to 90 lbs.	
3. Tall fescue (turf-type)**	130 to 170 lbs.	5.6 to 7.5
+ bluegrass	20 to 30 lbs.	
CHANNELS AND AREAS OF CONCENTRATED FLOW		
1. Perennial ryegrass	100 to 150 lbs.	5.6 to 7.0
+ white or ladino clover*	1 to 2 lbs.	
2. Kentucky bluegrass	20 lbs.	5.5 to 7.5
+ smooth bromegrass	10 lbs.	
+ switchgrass	3 lbs.	
+ timothy	4 lbs.	
+ perennial ryegrass	10 lbs.	
+ white or ladino clover*	1 to 2 lbs.	
3. Tall fescue**	100 to 150 lbs.	5.5 to 7.5
+ ladino or white clover*	1 to 2 lbs.	
4. Tall fescue**	100 to 150 lbs.	5.5 to 7.5
+ Perennial ryegrass	15 to 20 lbs.	
+ Kentucky bluegrass	15 to 20 lbs.	

* For best results: (a) legume seed should be inoculated; (b) seeding mixtures containing legumes should preferably be spring-seeded, although the grass may be fall-seeded and the legume frost-seeded (Practice 3.13); and (c) if legumes are fall-seeded, do so in early fall.

** Tall fescue provides little cover for, and may be toxic to, some species of wildlife. The IDNR recognizes the need for additional research on alternatives to tall fescue, such as buffalograss, orchardgrass, smooth bromegrass, and switch-grass. This research, in conjunction with demonstration areas, should focus on erosion control characteristics, wildlife toxicity, turf durability, and drought resistance.

NOTE: An oat or wheat companion or nurse crop may be used with any of the above permanent seeding mixtures. If so, it is best to seed during the fall seeding period, especially after Sept. 15, and at the following rates: spring oats–1/4 to 3/4 bu./acre; wheat–no more than 1/2 bu./acre.

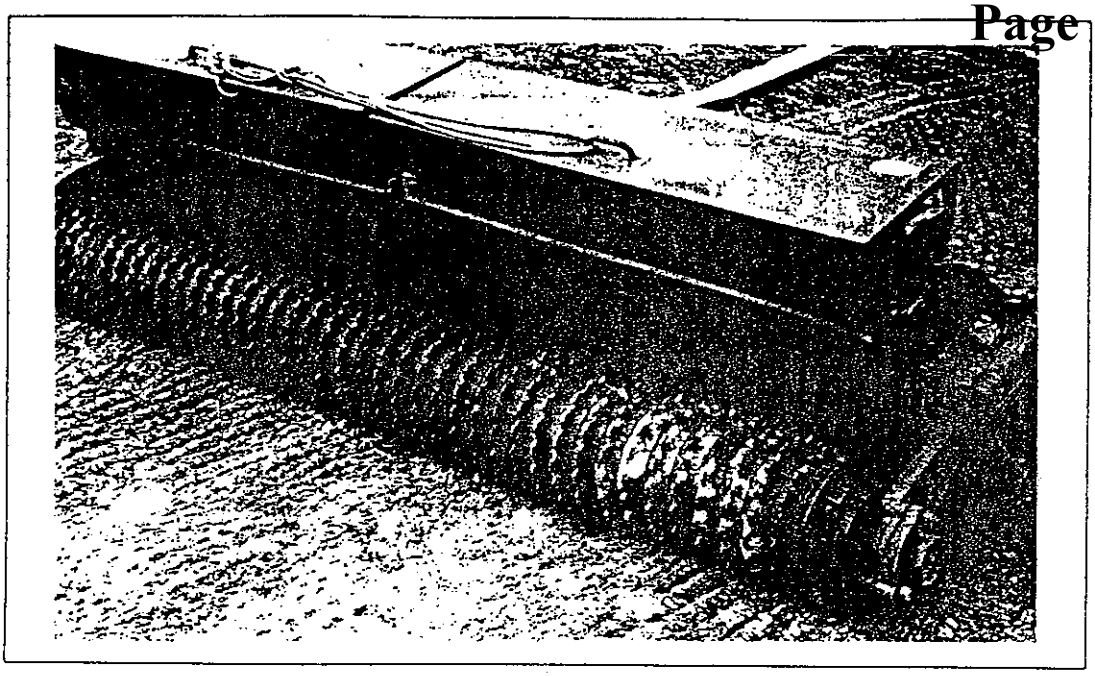

Exhibit 3.12-D. A cultipacker-seeder.

Maintenance

* Inspect periodically, especially after storm events, until the stand is successfully established. (Characteristics of a successful stand include: vigorous dark green or bluish-green seedlings; uniform density with nurse plants, legumes, and grasses well inter-mixed; green leaves; and the perennials remaining green throughout the summer, at least at the plant base.)
* Plan to add fertilizer the following growing season according to soil test recommendations.
* Repair damaged, bare, or sparse areas by filling any gullies, re-fertilizing, over- or re-seeding, and mulching.
* If plant cover is sparse or patchy, review the plant materials chosen, soil fertility, moisture condition, and mulching; then repair the affected area either by over-seeding or by re-seeding and mulching after re-preparing the seedbed.
* If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems. (Contact your SWCD or Cooperative Extension office for assistance.)
* If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.

Common concerns

Insufficient topsoil or inadequately tilled, limed, and/or fertilized seedbed--results in poor establishment of vegetation.

Unsuitable species or seeding mixture--results in poor establishment of vegetation.

Nurse crop rate too high in the mixture--results in competition with the perennials.

Seeding done at the wrong time of year--results in poor establishment of vegetation, also plant hardiness is significantly decreased.

Mulch rate inadequate--results in poor germination and failure.

CRITICAL AREA SEEDING FOR LANDFILLS

SPECIES	lbs/Acre	Site Suitability 2/ Droughty	Drained	Wet	Soil pH	Planting Dates Spring	Fall
PERMANENT COVER							
1. Tall Fescue (Alta or KY-31)	35	2	1	2	5.5-8.3	March 1- May 1	Aug 1- Sept 1
2. Emerald Crownvetch 1/	10	2	1	-	6.0-8.0	March 1- May 1	-
Tall Fescue 3/	25						
3. Smooth Bromegrass	20	2	1	-	6.0-8.0	March 1- May 1	Aug 1 Sept 1
Tall Fescue 3/	20						
4. Ky. Bluegrass	15	2	1	2	6.8-7.5	March 1- May 1	Aug 1 Sept 1
Tall Fescue 3/	25						
5. Creeping Red Fescue	20	2	1	-	6.0-7.5	March 1 May 1	Aug 1 Sept 1
Tall Fescue 3/	20						
6. Serecia Lespedeza (South. IN)	20	1	1	-	5.5-6.5	March 1- May 1	-
Tall Fescue 3/	20						
7. Ky. Bluegrass	20	2	1	-	6.0-7.5	March 1- May 1	Aug 1- Sept 1
Creeping Red Fescue	20						
8. Ky. Bluegrass	40	-	1	-	5.5-7.0	Feb 1- May 1	Aug 1- Sept 15
9. Reed Canary-grass	18	2	1	1	5.5-7.5	March 1 May 1	Aug 1 Sept 1
TEMPORARY COVER CROP							
1. Wheat	150	2	1	2	5.5-7.0	-	Sept 15 Oct 30
2. Rye	150	2	1	2	5.5-7.0	-	Aug 1- Sept 1
3. Spring Oats	100	2	1	2	5.5-7.0	March 1 April 15	Aug 1- Sept 1
4. Annual Ryegrass	20	2	1	2	5.5-7.0	March 1 May 1	Aug 1- Sept 1

FOOTNOTES

1/ Inoculate legumes with special inoculant

2/ 1 - Preferred, 2 - Will Tolerate

3/ Tall fescue considered is alta or KY-31

Practice 3.15
Mulching

Purposes
(Exhibit 3.15-A)

* To prevent erosion by protecting the soil from wind and water impact.
* To provide temporary surface stabilization.
* To prevent soil from crusting.
* To conserve moisture thereby promoting seed germination and seedling growth.

Exhibit 3.15-A. Applying straw mulch with a chopper-blower on freshly seeded soil adjacent to a road.

Requirements
(Exhibits 3.15-B and C)

Material: Straw, hay, wood fiber, cellulose, or excelsior (see *Exhibit 3.15-B*), or erosion control blankets or turf reinforcement mats (Practices 3.17 and 3.18), as specified in the erosion and sediment control plan.

Coverage: At least 75% of the soil surface.

Anchoring: Required for straw or hay mulch and sometimes excelsior to prevent displacement by wind and/or water (see *Exhibit 3.15-C*).

Exhibit 3.15-B. Mulch Materials, Rates, and Comments.

Material	Rate	Comments
Straw or hay	1½-2 tons/acre	Should be dry, unchopped, free of undesirable seeds. Spread by hand or machine. Must be crimped or anchored (see *Exhibit 3.15-D*).
Wood fiber or cellulose	1 ton /acre	Apply with a hydromulcher and use with tacking agent.
Long fiber wood (excelsior)	1/2-3/4 ton/acre	Anchor in areas subject to wind.

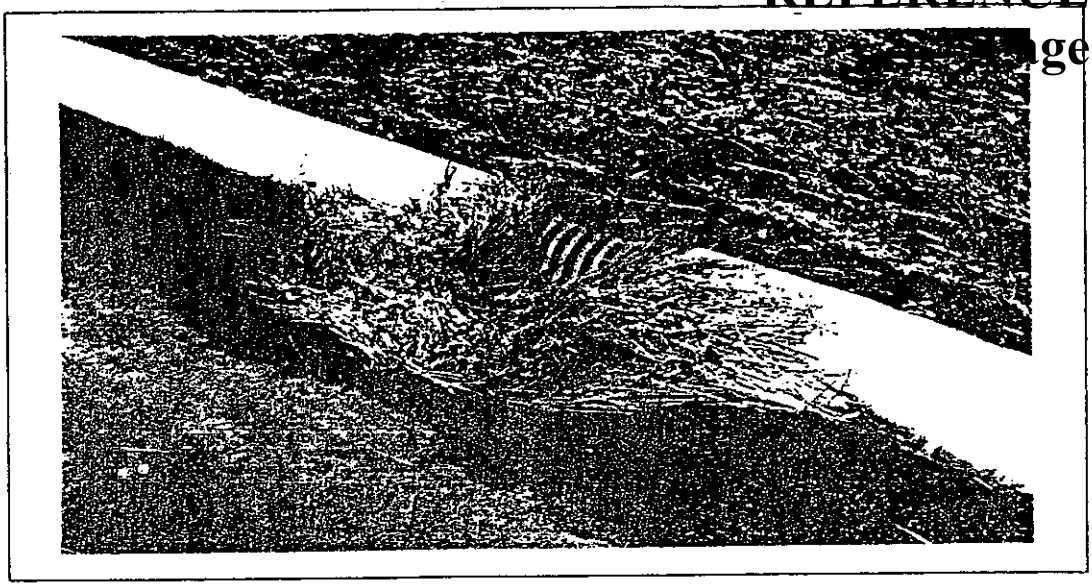

Exhibit 3.15-C. This unanchored straw mulch flowed with runoff to the storm drain. While acting somewhat as an inlet protection filter, it would have been more effective keeping soil from eroding off the site.

Application and anchoring

(Exhibits 3.15-D, E, and F)

1. Apply mulch at the recommended rate.
2. Spread uniformly by hand, hay fork, mulch blower, or hydromulcher. After spreading, no more than 25% of the ground surface should be visible.
3. If straw or hay is used, anchor it immediately one of the following ways (see *Exhibit 3.15-D*):
   - Crimp with a mulch anchoring tool, a weighted farm disk with dull serrated blades set straight (see *Exhibit 3.15-E*), or track cleats of a bulldozer; OR
   - Hydromulch with short cellulose fibers (see *Exhibit 3.15-F*); OR
   - Apply a liquid tackifier; OR
   - Cover with netting secured by metal staples.

Exhibit 3.15-D. Mulch Anchoring Methods.

Anchoring method	How to apply
Mulch anchoring tool OR Farm disk (dull, serrated, and set straight)	Crimp or punch the straw or hay into the soil 2-4 in. Operate machinery on the contour of the slope.
Cleating with dozer tracks	Operate dozer up and down slope, not across, or else the tracks will form rills.
Wood hydromulch fibers	Apply 1-2 tons/acre using a hydromulcher at a rate of 750 lbs./acre with a tacking agent (or according to contractor specifications). Do not use in areas of concentrated flow.
Asphalt emulsion	Emulsified asphalt should conform to the requirements of ASTM Spec. #977. Apply with suitable equipment at a rate of 0.05 gal./sq. yd. Do not use in areas of concentrated flow.
Synthetic tackifier, binder or soil stabilizer	Apply according to manufacturer's recommendation.
Biodegradable netting (polypropylene or similar material)*	Apply over mulch and staple with 6-8 in. wire staples. Follow manufacturer's recommendations for installation. Best suited to slope application.

* Install the netting immediately after applying the mulch. In areas of concentrated water flow, lay it parallel to the direction of flow; on other slopes, lay it either parallel or perpendicular to direction of flow. Edges of adjacent netting strips should overlap 4-6 in., with the strip on the upgrade side of any lateral water flow on top. Installation details are site specific, so follow manufacturer's directions.

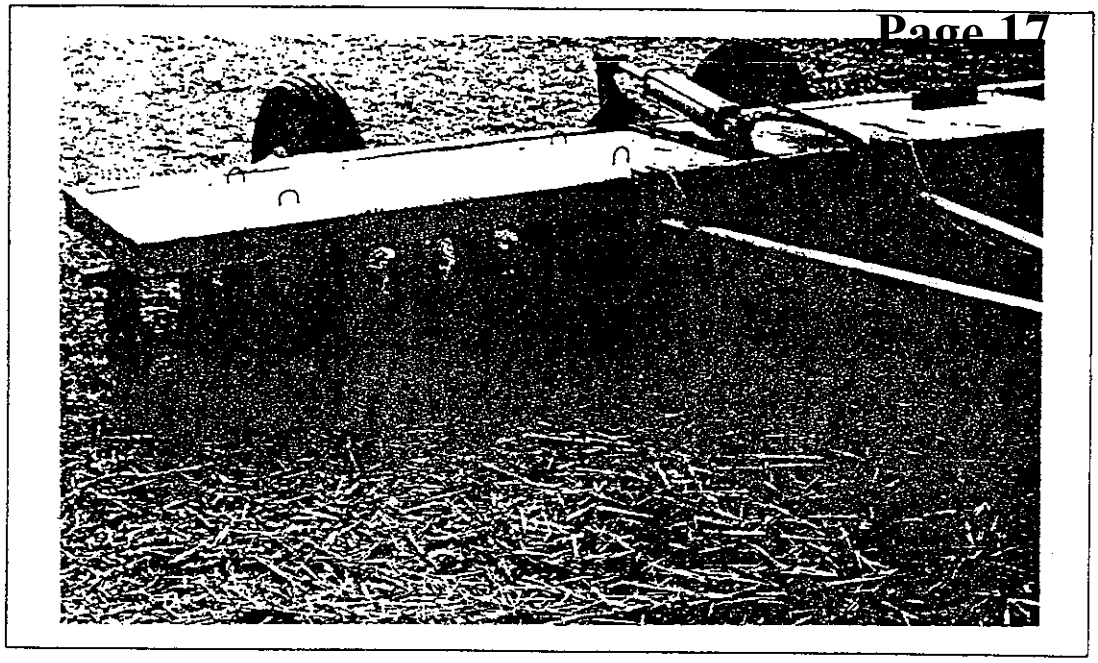

Exhibit 3.15-E. A crimper can be used to anchor mulch into the soil more securely.

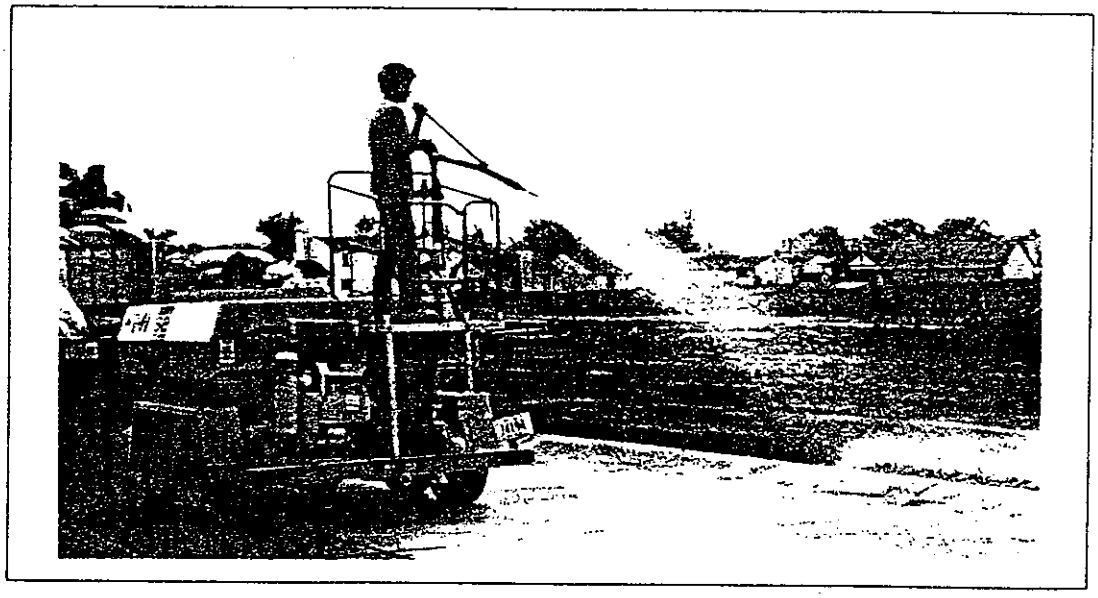

Exhibit 3.15-F. Hydroseeding the roadside in a new subdivision.

Maintenance

* Inspect after storm events to check for movement of mulch or for erosion.
* If washout, breakage, or erosion is present, repair the surface, then re-seed, re-mulch and, if applicable, install new netting.
* Continue inspections until vegetation is firmly established.

Common concerns

Inadequate coverage--results in erosion, washout, and poor plant establishment.

Appropriate tacking agent not applied or applied in insufficient amount--results in mulch being lost to wind and runoff.

Flow too concentrated to use straw mulch--results in erosion in channel; consider use of erosion control blankets and/or a diversion until vegetation is established.

Hydromulch applied in winter--results in deterioration of mulch before plants can become established.

Netting washed away--because insufficient number of staples used.

Office of Enforcement

Matthew T. Klein
Hazardous Waste Section
Office of Enforcement
Indiana Department of Environmental Managment
100 North Senate Avenue
Indianapolis, Indiana 46206-6015
(317) 233-6335
Fax: (317) 233-5968

FAX TRANSMISSION COVER SHEET

Date: *November 7, 1996*

To: *Mr. Mike Mikulka*
U.S. EPA

Fax: *(312) 353-4788*

Re: *Attached is the water-specific inspection report for the September 26, 1996 inspection of the GDC Landfill. This report was created by inspector Mark Balazs, Office of Water Management, IDEM.*

Sender: *Matthew T. Klein*

YOU SHOULD RECEIVE 3 PAGES, INCLUDING THIS COVER SHEET. IF YOU DO NOT RECEIVE ALL TIIE PAGES, PLEASE CALL (317) 233-6335 or (317) 233-5529.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Water Management - Inspections Section
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46204

FACILITY SITE INSPECTION

PART I - Basic information about the facility:

FACILITY NAME: Gary Development Company, Inc.

ADDRESS: 479 North Cline Avenue
P.O. Box 6056
Gary, Indiana 46406

SITE CONTACT: Larry Hagen, Jr.
Foreman
(219) 944-7858

CORRESPONDENCE TO: Bose-McKinney and Evans
Atty. Stephen Cherry
2700 First Indiana Plaza
135 North Pennsylvania Street
Indianapolis, Indiana 46204
Telephone: (317) 684-5105

RECEIVING STREAM: Grand Calumet River

FACILITY SIC CODE: 4953 (Refuse Systems)

FACILITY DESCRIPTION: A former mined-out sand pit, the facility began accepting solid waste for disposal in September 1974. The facility operated as a sanitary landfill until August 1989, when waste acceptance reportedly stopped.

PART II - Basic information on inspection findings:

On September 26, 1996, IDEM-NWRO staff members Mark Balazs (OWM), Bob Blaesing (OSHWM), Bob Lamprecht (OSHWM), Bill Burns (OSHWM), and U.S. EPA staff member Mike Mikulka and Indiana Department of Natural Resources-Division of Soil Conservation Urban Conservation Specialist Larry Osterholz conducted an inspection of the abovementioned facility. Photographs of the facility were taken by OSHWM staff. This report only identifies findings of OWM staff member Mark Balazs.

No point-source discharges of process (leachate) waters were observed leaving the property, and there was no evidence of active pumping discharges. However, several point-source discharges of storm water runoff were observed leaving the property's southern boundary into the Grand Calumet River. The runoff was visibly laden with soil sediment and caused a discoloration of the Grand Calumet River along the facility boundary. A sample of the runoff was collected, but never analyzed.

Based on the facility's operational practices and SIC Code (landfill that received industrial wastes classification), an application must be submitted for a storm water permit in accordance with 327 IAC 15-6. It is recommended that the facility apply for an individual storm water permit, based on the potential severity of contamination entering the adjacent Grand Calumet River. This requirement for a permit is also specified in a March 1994 Final Order of the Water Pollution Control Board. In the Order, the company was ordered to cease discharging any water off-site until the discharge conforms with a valid NPDES permit.

PART III - Contact information:

If you require further information about the storm water permitting issue, contact Mark Balazs at (219) 881-5759 or Laura Bieberich, Storm Water Permitting Desk, at (317) 233-6725.